Data Visualization Tools for High School Teachers

Day 2

Before We Begin

Pre-workshop notes

Use headphones · Everyone their own laptop · Quiet space · Reliable internet connection · Camera on
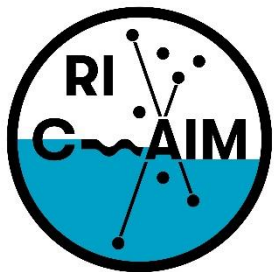

online etiquette

Mute yourself · Press spacebar to unmute · Want to speak · Yes / agree

RHODE ISLAND CONSORTIUM FOR
Coastal Ecology Assessment Innovation & Modeling

Agenda

- 9:00 – 9:15: Recap of the first day
- 9:15 – 9:50: Infogram Basics
- 9:50 – 10:00: Break
- 10:00 – 10:50: Georgia Rhodes
- 10:50 – 11:00: Break
- 11:00 – 11:50: Infogram Charts
- 11:50 – 12:00 Discussions and expectations for Day 3

Yesterday

- SimpleChartsRI:
  - What did you learn?
  - How can you use it?

- Your Survey Feedback

- Juvenile Data
  - https://www.ojjdp.gov/ojstatbb/population/qa01104.asp

- Obesity Rates Data
  - https://www.cdc.gov/nchs/data/hestat/obesity-child-17-18/obesity-child.htm#table1

Tomorrow

- Teacher Activity Report:
- http://www.simplechartsri.com/additional-files/Teacher%20Report%20Template%20fillable.pdf

Guest Speaker

Georgia Rhodes

"Visual Inquiry at the Edna W. Lawrence Nature Lab"

Visualization & Imaging Research Associate at Rhode Island School of Design

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Data Visualization Tools

- Excel
- Google Sheets
- Power BI
- Tableau
- Piktochart
- Infogram

What is Infogram?

- A way to make infographics, dashboards and Graphs.

- You can focus solely on the visualization side of it, but there are many options to add different graphics or animations

- The free option limits you to 10 projects, max 5 pages each
  - You also have no option to download the project; it becomes public and you can get a shareable link to view it
  - You can take a nice screenshot of your project from the download page, though

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The Great Gatsby: Chapter 1 Word and Theme Frequency
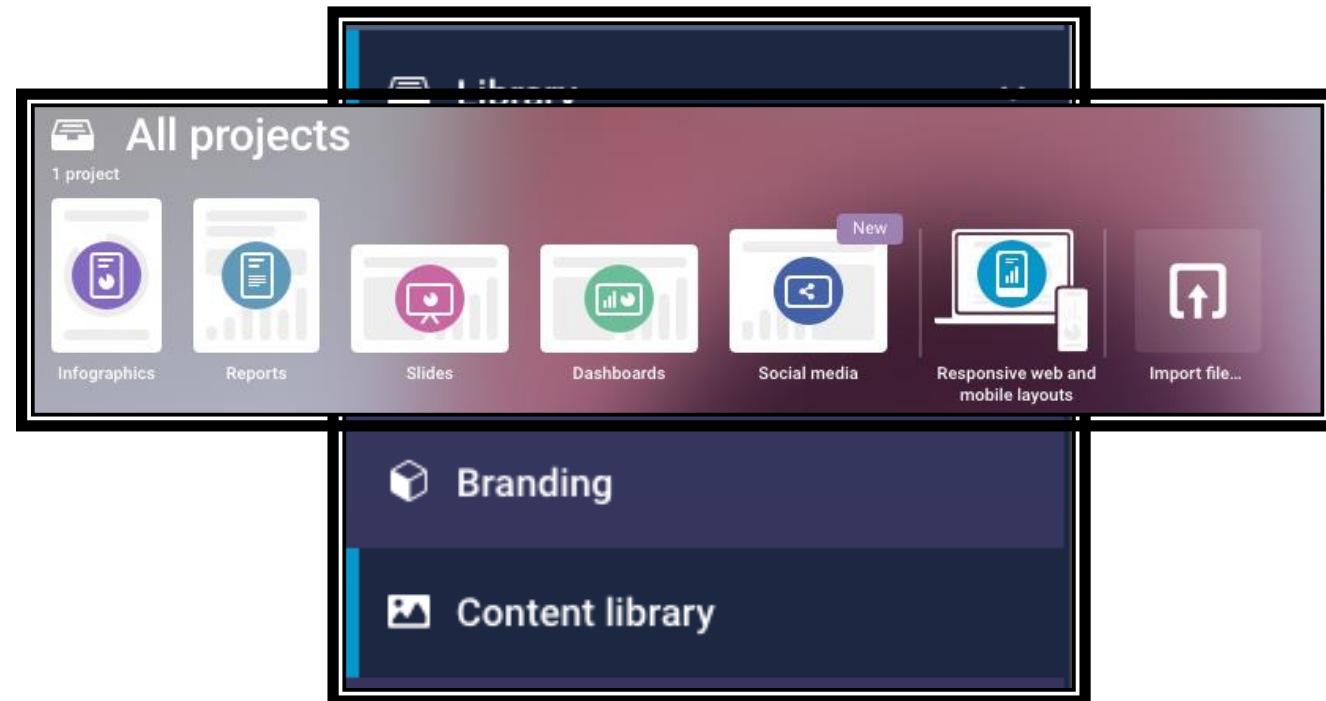
Daisy

Desires

Gatsby Society

Assumptions

How does it work?

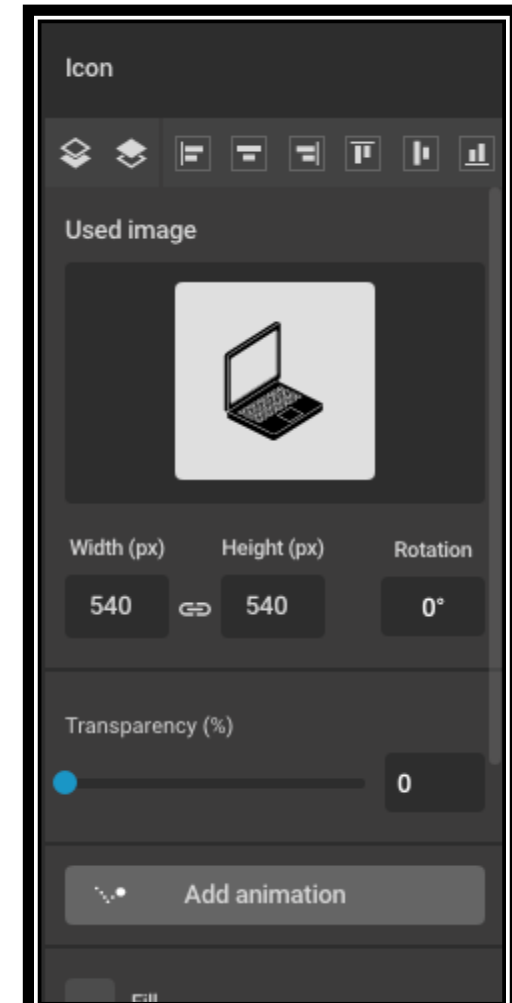infogr.am

The Dashboard – New Project Options
- Choosing one takes you to the relevant template section of their library
- From there you can search for a template, you look at the other categories' options
  - Content Library is every icon they have and what you uploaded

All projects
1 project

Infographics   Reports   Slides   Dashboards   Social media   New   Responsive web and mobile layouts   Import file...

Branding

Content library

How does it work?

The Project Toolbar and Element Settings

- There are so many options once you start looking!
  - You have Text, Charts, Maps, Elements, Graphics, Shapes, and Integration (video, links, data)
- Anything on the page can have its settings changed once you click on it
  - Order, color, size, transparency, and more

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Grid

100%

Icon

Used image

Width (px) Height (px) Rotation
540   540   0°

Transparency (%)
0

Add animation

Course Descriptions

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- With Infogram, you can make class selection more engaging for incoming or returning students
  - For example, I made a course description
- I did this by:
  - Going to Infogram and made an account (signed in with Google)
  - Made a new project with the "Long Resume" template
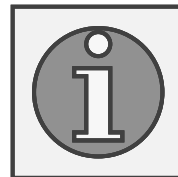 - Filled in, rearranged, deleted, and changed what I needed

https://infogram.com/class-description-1h7z2lrrqqwl2ow

Student Reports

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- Say you want parents and students to easily track their attributes in a class (attendance, completed work, etc.)
  - For example, I made a student report
- With the paid version you can link a Google Sheets spreadsheet to the table for live data
  - Any changes you make to the spreadsheet show up in the report
  - Any parents or students that have the link to the report can see changes in real time

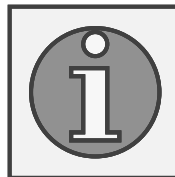https://infogram.com/student-report-1hzj4ozz9ln72pw

Dashboards

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- Dashboards are a great way to visualize and track metrics related to department or project.
- With Infogram's dashboard maker you can connect your data and make better decisions.

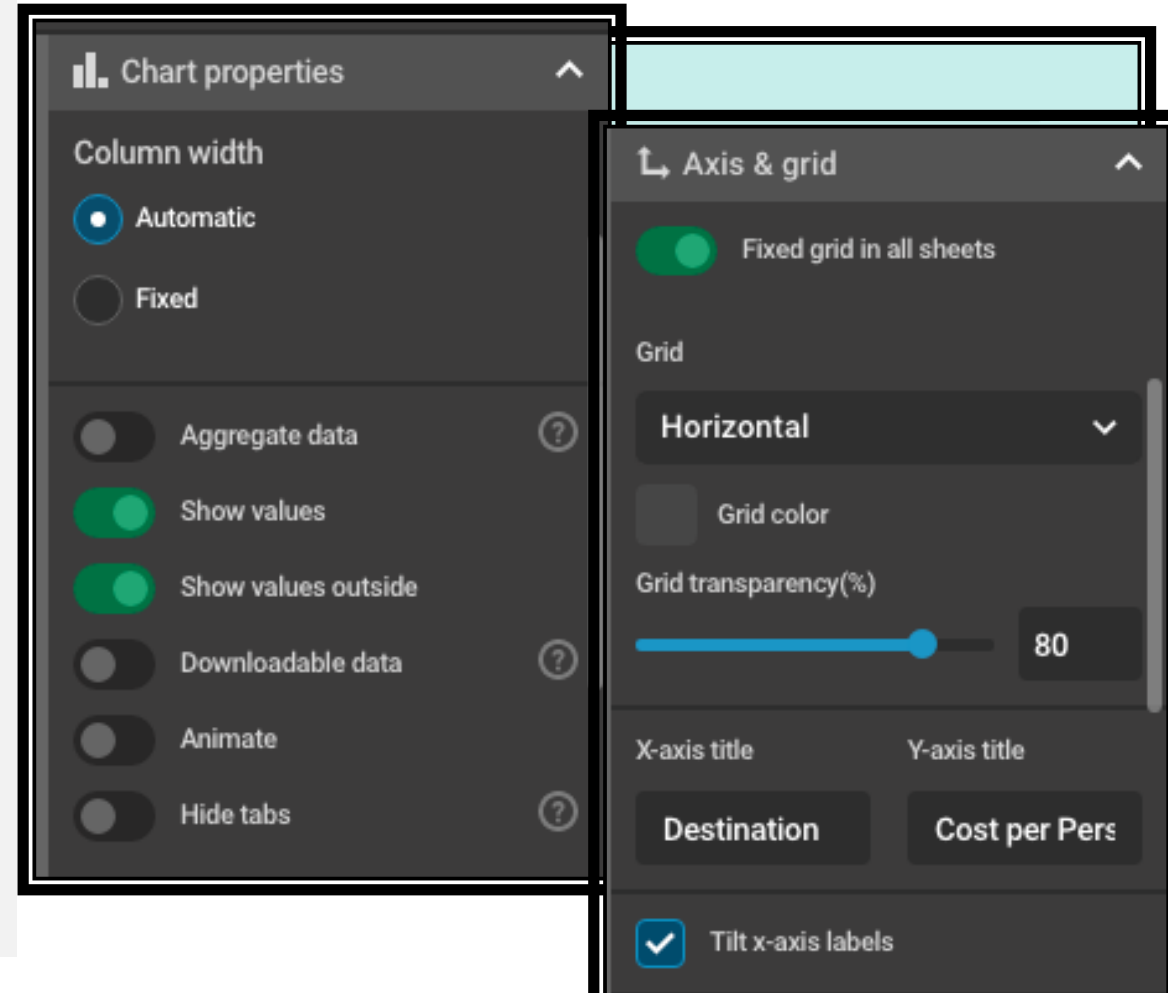# Infogram Basics

- Let's try it on Infogram

Charts

- Charts are graphical representations of data.
- Charts make it easy to understand large quantities of data, find patterns and relationships and identify trends.
- Infogram offers a wide variety of charts ranging from interactive bar charts, area charts, pie charts to more complex ones like treemaps, word clouds, scatter charts or candlestick charts.

How does it work?

Finalizing the Graph

- Going back to the settings, I want to add some elements
- I want data labels since this will be a printed poster
    - Go to "Chart properties" --> "Show values" and/or "Show values outside"
    - If I share the poster from Infogram digitally, you may not need data labels since the labels appear when you hover over a column
- I want axis titles
    - Go to "Axis & grid" and scroll down to find the text boxes for each axis
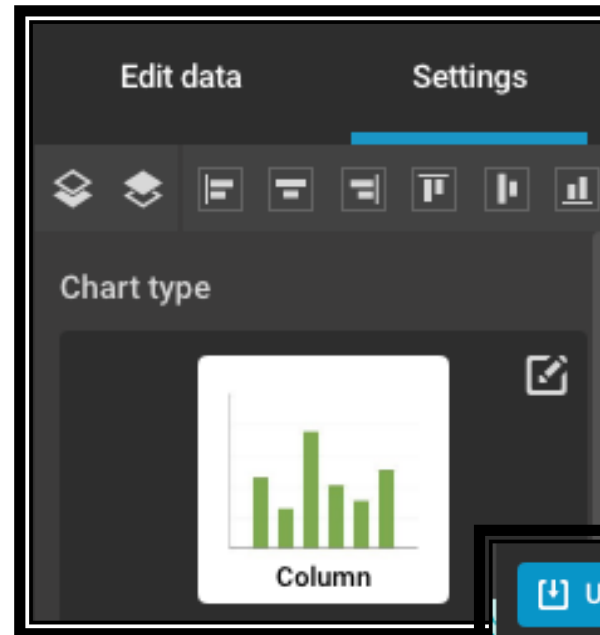- There are many more options to play around with if you make a chart on Infogram

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Chart properties

Column width

- ● Automatic
- ○ Fixed

- Aggregate data ?
- ● Show values
- ● Show values outside
- Downloadable data ?
- Animate
- Hide tabs ?

Axis & grid

● Fixed grid in all sheets

Grid

Horizontal ∨

☐ Grid color

Grid transparency(%)

80

X-axis title   Y-axis title

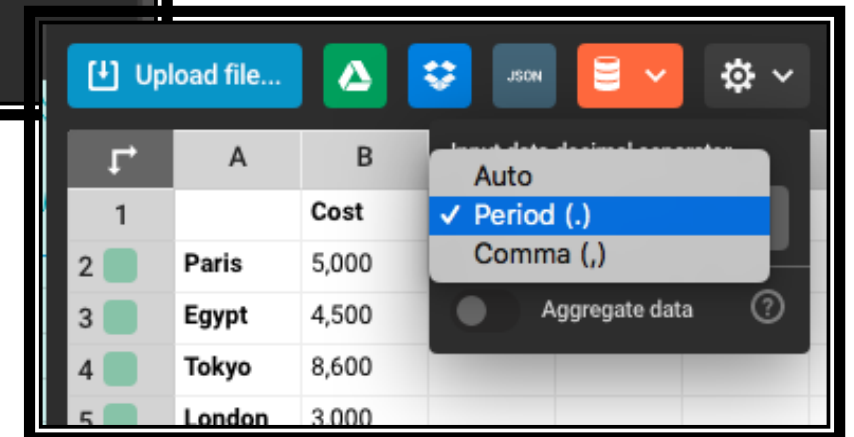Destination   Cost per Pers

☑ Tilt x-axis labels

How does it work?

Importing Data

- Since the data set is so small, I can just edit the chart element directly
  - While the bar chart is selected, click "Edit data" to bring up the spreadsheet and fill in your data
- What if I already have a spreadsheet of data? Simple!
  - The "Edit data" tab allows you to upload an Excel file, a .csv file, a Google Sheets file, and much more
- With .csv, make sure to click on the little gear icon to change how the data is separated

I chose to use a bar chart

How does it work?

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Making a Visualization
- Look at your data and choose a chart type that works, not one that looks interesting
- Let's say I want to make a poster for the Travel Abroad club at school
  - I want to show the cost per person to different destinations the group may go to
- What chart type do you think would work for this data?

Destination	Cost
Paris	5,000
Cairo	4,500
Tokyo	8,600
London	3,000
Brazil	3,300

Charts

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- Let's try it on Infogram

More Resources

- https://www.youtube.com/c/Infogram/videos

- https://infogram.com/page/best-resources

Teacher Groups

Gina Cunha
Don Lurgio
Amy Kizzee

Shannon Donovan
Joel Swan

Elizabeth Letourneau
Mark Davis

Justin Kuncz
Helaine Hager

Kelly Reese
Whitney Biafore

Day 3 Expectations

- Infogram Graphs

- Data Visualization using Python

- Group Activity

```
# importing the required module
import matplotlib.pyplot as plt

# x axis values
x = [1,2,3]
# corresponding y axis values
y = [2,4,1]

# plotting the points
plt.plot(x, y)

# naming the x axis
plt.xlabel('x - axis')
# naming the y axis
plt.ylabel('y - axis')

# giving a title to my graph
plt.title('My first graph!')

# function to show the plot
plt.show()
```
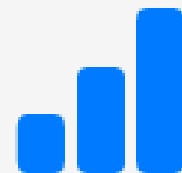
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SimpleChartsRI

Thank you!
Any Questions?

End of Day 2